Conserving and Enjoying Missouri's Prairies

Of the remaining 75,000 acres of native prairie in Missouri, about 53,000 acres are in private ownership. Landowners value their prairies for a variety of reasons and some maintain them as forage for livestock. The 22,000 acres of public prairies are owned by the Department of Conservation, the Department of Natural Resources, The Nature Conservancy, the Missouri Prairie Foundation, the University of Missouri and the Ozark Regional Land Trust. Our public prairies are great for hiking, wildlife viewing and other outdoor recreation. For a directory of Missouri's public prairies, write to: Public Prairies of Missouri, Distribution Center, Missouri Department of Conservation • P.O. Box 180 • Jefferson City, MO 65102 or view www.conservation.state.mo.us/nathis.

Public agencies, organizations and private landowners work together as the Grasslands Coalition to improve remaining prairies through prescribed burning, periodic haying and selective cutting of woody species. With public and private landowners working together, large landscape-sized prairie tracts are being restored. If you are interested in being involved, write to: Grasslands Coalition • P.O. Box 180 • Jefferson City, MO 65102.

Prescribed prairie burn

Lead plant is a member of the bean or legume family. Legumes provide valuable nitrogen to prairie soil.

Prairie as a landscaping model

Prairie plants are ideal for low maintenance landscaping. The broad range of colors and textures of their flowers and foliage add interest to gardens year-round. Prairie plants provide nectar and pollen for insects; seeds and dead plant material provide food and cover for wildlife in fall and winter. They are naturally adapted to our local climate, rainfall, insects and other herbivores. For more information, write to: Native Plants for Landscaping, Distribution Center • Missouri Department of Conservation • P.O. Box 180 • Jefferson City, MO 65102.

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All photos by Jim Rathert except cover photo of La Petite Gemme Prairie and maximillian sunflowers by Pat Whalen; poster photo of Paint Brush Prairie by Don Kurz. Lead plant illustration by Heidi Natura, courtesy of Conservation Research Institute. Presettlement prairie map (cover) researched and compiled by Walter A. Schroeder. Cover illustration of wild hyacinth by Miriam Wysong Meyer, courtesy of the Illinois Department of Conservation, Division of Forestry.

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When European explorers first came to North America, they used the word prairie—the French word for meadow—to describe the vast grasslands they encountered. Prairies are extensive grasslands with a diversity of wildflowers and few shrubs or trees.

In the years prior to statehood, more than one-third—or nearly 15 million acres—of Missouri's landscape was tallgrass prairie. Forty percent of present day St. Louis and portions of Kansas City were covered with grasses and wildflowers. Bison, elk, prairie-chickens and many other animals roamed across Missouri's prairies.

Today, through agriculture and other human development, we have fewer than 75,000 acres of original prairie in Missouri. Our remaining prairies are home to life forms that have lived here for thousands of years. They are part of our natural legacy and are worthy of our protection.

Presettlement Prairie

Missouri's Natural Communities: Prairies

History of the Prairie

Prairies once covered much of North America, from the Rocky Mountains to Indiana, with scattered prairies extending to the eastern seaboard. The three major types of prairie, determined largely by rainfall, are shortgrass, mixed-grass and tallgrass.

Missouri has tallgrass prairie, which expanded across the state from the Great Plains around 10,000 years ago. Over these millennia, Native Americans and lightning created fires that helped maintain Missouri's prairies. Land managers today use prescribed fire for many of the same reasons that Native Americans did: to maintain healthy, open prairies that in turn support thriving plant and animal populations.

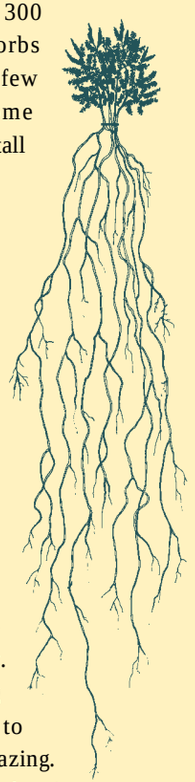
More than 99 percent of Missouri's original prairie has been converted to agriculture and other human development. The rarity of our remaining prairie makes the efforts to protect them all the more valuable.

Above: Indian paintbrush carpets some Missouri prairies in spring. Top right: A monarch butterfly feeds on rough blazing star nectar. Right: Profile of lead plant, whose roots can grow 15 feet deep.

Plants and Animals of the Prairie

Prairie Plants

While prairies are dominated by grasses, Missouri tallgrass prairies are really communities of as many as 300 different kinds of grasses, forbs (broad-leaved plants), and a few woody shrubs and trees. Some prairie plants can grow 8 feet tall or more.



The plants we see above ground are only part of the prairie plant community. Prairie plants have deep and complex root systems, some as deep as 15 feet. Prairie plant roots absorb water much better than the shallow roots of imported cool-season grasses, like tall fescue, brome and bluegrass. Having most of their mass underground, prairie plants are better able to survive fire and drought. Also, they have their growing points at or below ground level to withstand periodic fires and grazing. As prairie plants die, bacteria, fungi and other microorganisms break down the roots, creating some of the richest, deepest soil in the world.

Prairie Animals

When we think of prairie wildlife, bison and elk may come to mind. However, these large grazers no longer occur naturally in Missouri. The most numerous kinds of prairie wildlife also are the smallest: insects. As many as 100 different kinds of ants and more than 150 kinds of bees live in the tallgrass prairie region. Together with butterflies, moths, beetles and thousands of other different insects, these small animals do much of the work on the prairie: they are important pollinators, help build soil by cycling nutrients and provide food for birds and other animals.

Birds are the most visible and audible of our prairie animals. In late spring and summer, ground-nesting greater prairie-chickens, eastern meadowlarks, dickcissels, bobwhite quail and bobolinks are active. Other signature prairie birds are upland sandpipers, grasshopper sparrows, Henslow's sparrows and scissor-tailed flycatchers.

Prairie amphibians like the northern crawfish frog are secretive. They breed in shallow, fishless prairie ponds. Prairie reptiles like the ornate box turtle and the bullsnake (Missouri's largest snake) also are hard to see.

Small prairie mammals like prairie voles and shrews spend most of their time in burrows underground, safely away from birds and other predators. Rabbits, coyote and white-tailed deer also live on prairies.

Right: A dickcissel sounds its namesake call, "dick dick cissel."

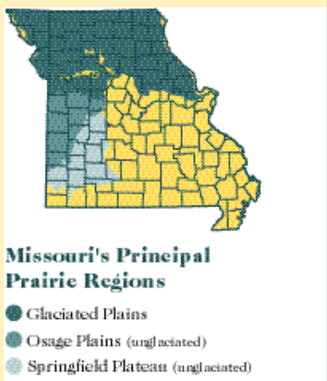
Top: A male greater prairie-chicken with inflated air sacs attempts to attract a mate. Above: A milkweed beetle crawls along a leaf of its host plant. There may be as many as 1,000 beetle species on Missouri prairies.

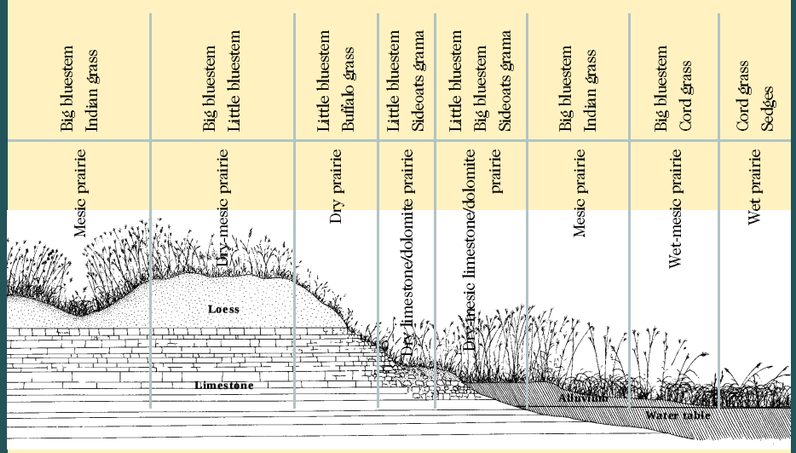
Healthy prairie streams support a variety of aquatic animals, such as the red shiner, brassy minnow and northern crayfish. Intact prairies trap sediments and pollutants, releasing a steady supply of clear water to prairie streams. Unfortunately, stream channelization, erosion and waste runoff have degraded many prairie streams, threatening the survival of some stream animals.

Prairie Types in Missouri

Prairie Communities

In The Terrestrial Natural Communities of Missouri, (1987) author Paul Nelson identifies 14 different prairie types. These communities are classified according to soil moisture levels (dry to mesic to wet), geology, dominant vegetation and topography. Four of Missouri's most common remaining prairie communities are described on this page.



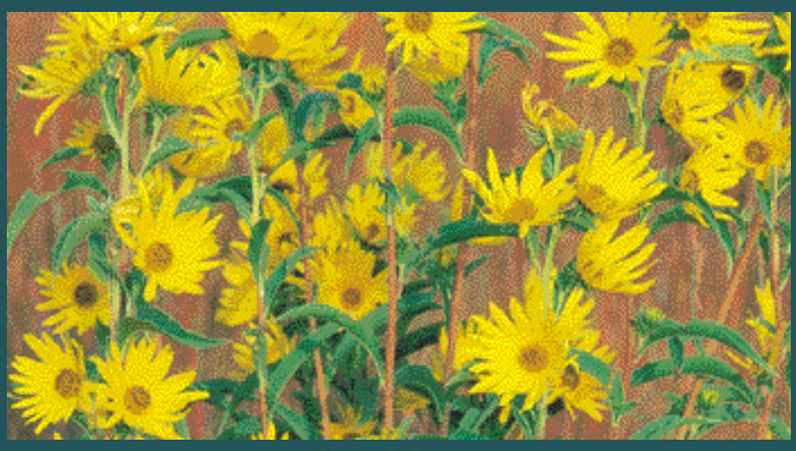


Profile of hypothetical topography showing the position of some prairie communities. Diagram by Paul Nelson from The Terrestrial Natural Communities of Missouri, *courtesy of the Missouri Natural Areas Committee.*

Loess hill prairies

Missouri's steep-sloped loess hill prairies occur in the extreme northwestern corner of the state, along the Missouri River floodplain and other streams. Loess (pronounced "luss") is ancient, wind-blown soil. The dry loess hill prairies harbor plants that are common to the nearby Great Plains region but are rare or endangered in Missouri. Some of these include large beard-tongue (at right), downy painted cup and skeleton plant. Because of the harsh conditions of the loess hills, most grasses grow only 3 feet tall. Dominant grasses include hairy grama grass, blue grama and sideoats grama. Wildflowers include silky aster, ground plum and foxtail dalea. The plains hognose snake is restricted to the loess hill region. You can see loess hill prairies at Star School Hill Prairie Natural Area (below), McCormack Loess Mound Natural Area and Brickyard Hill Loess Mound Natural Area.

Loess Hill



Dry-Mesic

Dry-mesic prairie

The most widespread of our remaining prairies, dry-mesic prairie types occur on the well drained rolling uplands of the Glaciated Plains, the undulating Osage Plains and the flatter Springfield Plateau. In the Glaciated Plains, dry-mesic prairie occurs over loess and other glacial soils; in southwestern Missouri, dry-mesic prairies occur over silty soils derived from bedrock (sandstone/shale, chert and limestone/dolomite). Dry-mesic sandstone/shale prairie is the most common remaining prairie type because its rocky and relatively infertile soils have protected it from conversion to agriculture. The dominant grasses—little bluestem and Indian grass—grow 4 to 6 feet tall. Common wildflowers include ashy sunflower, sky blue aster, Maximillian sunflowers, compass plant, lead plant, blazing star, flowering spurge and coneflowers. Prairie State Park, Wah'Kon-Tah Prairie, Pawnee Prairie and Paintbrush Prairie are a few of our dry-mesic public prairies.

Above: Maximillian sunflowers grow on dry-mesic prairies in southwestern Missouri in late summer. Left: Purple prairie clover is a characteristic plant of dry-mesic prairies and blooms in early summer.

Mesic prairie

Mesic prairie, which is moderately moist throughout the growing season, occurs on well drained, lower slopes of hills and plains and in prairie draws in all of Missouri's prairie regions. Mesic prairies are generally quite showy with lush grasses reaching up to 8 feet tall and diverse wildflowers, including gama grass, big bluestem, prairie dropseed grass, compass plant, Culver's root, blazing star and bunchflower. Helton Prairie Natural Area in Harrison County is a beautiful example of mesic prairie.

Wet prairie

Often bordering marshes or associated with floodplains, lower slopes of prairies or areas with groundwater seepage, wet prairies have saturated soils through much of the growing season. They occur in the Glaciated and Osage Plains. Typical plants are prairie cordgrass (also known as "ripgut" or "slough grass"), blueflag, swamp milkweed and sedges and rushes. You can see wet prairie at Douglas Branch Conservation Area, Ripgut Prairie Natural Area and Chloe Lowry Marsh Natural Area.

Right: White Culver's root and magenta blazing star grow in mesic prairie. Bottom: Cordgrass and sweet coneflowers are common in Missouri's wet prairies.

Mesic and Wet